

Chapter 1 Essentials of Geometry

1-1 Identify Points, Lines, and Planes

point location; no dimension; no thickness

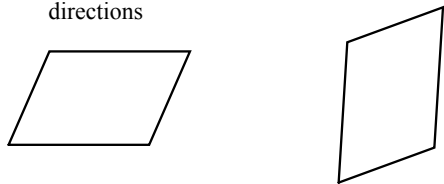
line made up of points; two dimensions; infinite in both directions; no thickness

collinear points--points on the same line

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plane flat surface; two dimensions; infinite in all directions



coplanar points-- points on the same plane

line segment--has 2 endpoints



ray--one endpoint



opposite rays


intersection--set of points that the figures have in common

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Jun 19-12:52 PM

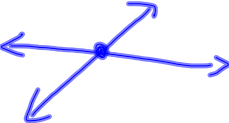
From 2.4

Postulate 5--through any 2 points, there exists exactly one line



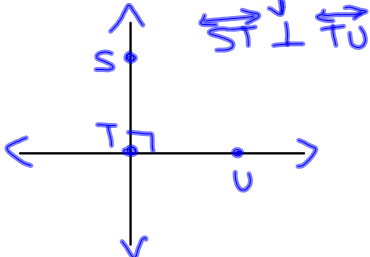
Postulate 6--A line contains at least 2 points

Postulate 7--If 2 lines intersect, then their intersection is exactly one point

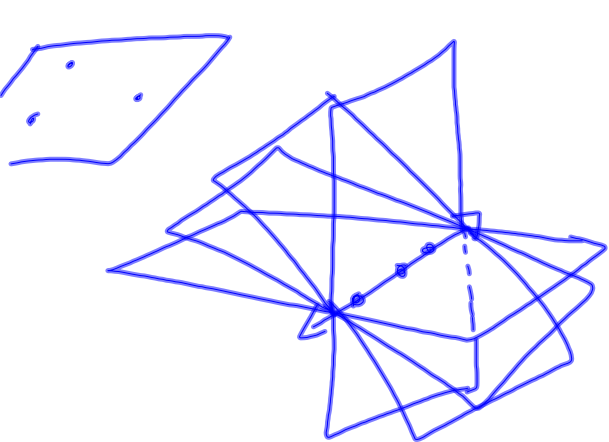


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perpendicular lines--2 lines that intersect to form a right angle



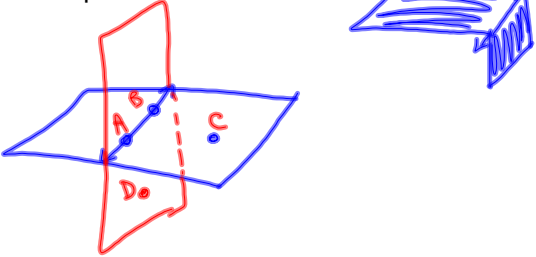
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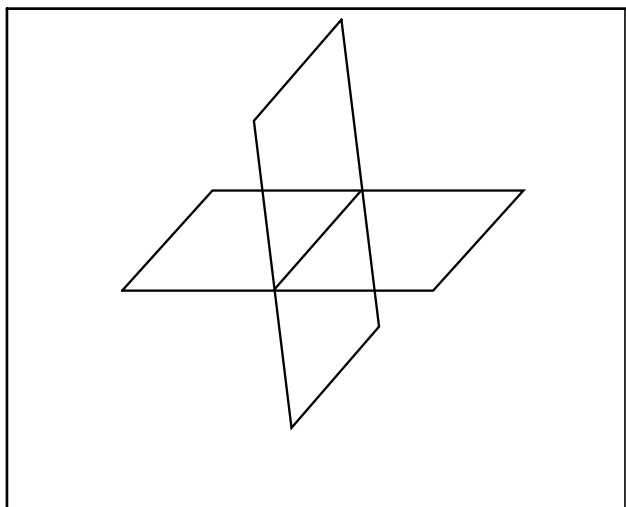
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Postulate 8--Through any 3 noncollinear points there exists exactly one plane

Postulate 9--A plane contains at least 3 noncollinear points

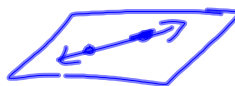


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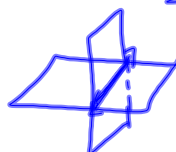


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Postulate 10--If 2 points lie in a plane, then the line containing them lies in that plane



Postulate 11--If 2 planes intersect, then their intersection is a line

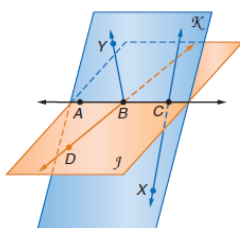


Space - set of all points

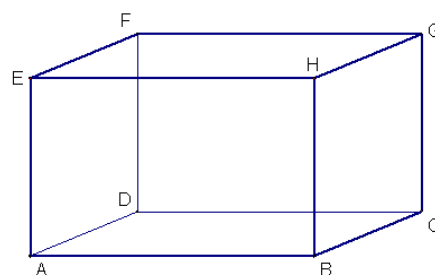
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True or False

1. C and D are collinear.
2. \overline{XB} lies in plane \mathcal{K} .
3. Points A , C , and X are coplanar.
4. \overline{AD} lies in plane \mathcal{J} .
5. X and Y are collinear.
6. Points Y , D , and C are coplanar.



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Sep 10-2:26 PM

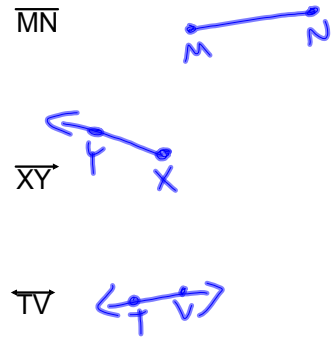
Space--set of all points

white erase boards

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Sep 10-2:31 PM

Draw the following:

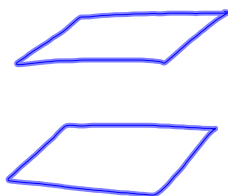


2 intersecting planes

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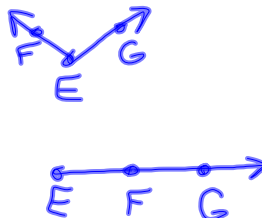
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2 parallel planes



Sep 7-9:30 AM

\overrightarrow{EF} and \overrightarrow{EG}



Sep 7-9:28 AM

3 collinear points

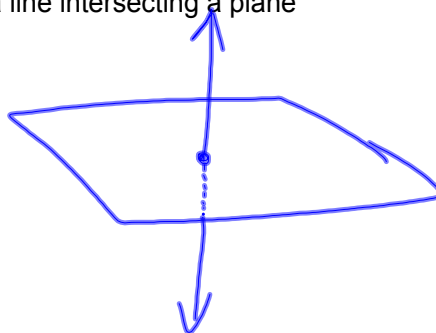


3 noncollinear points



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a line intersecting a plane



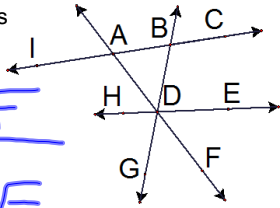
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Name a point that is collinear with...

$A + D, \underline{E}$

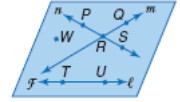
$H + D, \underline{E}$

$B + C, \underline{A \text{ or } I}$



Refer to the figure.

13. Name a line that contains point P .
14. Name the plane containing lines n and m .
15. Name the intersection of lines n and m .
16. Name a point not contained in lines ℓ , m , or n .
17. What is another name for line n ?
18. Does line ℓ intersect line m or line n ? Explain.

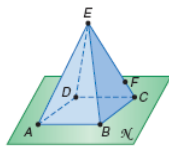


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Jun 19-1:00 PM

Refer to the figure.

30. How many planes are shown in the figure?
31. How many planes contain points B , C , and E ?
32. Name three collinear points.
33. Where could you add point G on plane \mathcal{N} so that A , B , and G would be collinear?
34. Name a point that is not coplanar with A , B , and C .
35. Name four points that are coplanar.



Homework

p 5-8

#s 1, 3-6, 8-11, 17-24, 43

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